

**CERTIFICATE****No. A/17-633001****Rev 00****Date 2017-01-25****Page 1/3**INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References
754358	Customer order 2017-01-13	Order No. Subs No. ABSMT Dispatch note 465932 622822 37721/54 ABSMT No. C.Code 300-57359 15
003-00991	ITEMS	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
Steel making process Electric furnace	

Technical requirements
ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17495:2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80

EXTENT OF DELIVERY								
It	Product designation		Heat	Lot	Pieces	Kg	M	
03	THT-3R60-12-1		048301	20350	90	152.0	540.00	
	12.00 X 1.00							
Total					90	152.0	540.00	
KEY TO HEAT								
Heat Code		Heat No.						
048301		545682						
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048301	0.021	0.45	1.52	0.031	0.0070	17.31	13.11	2.65
	N							
048301	0.038							
Quality assurance - Lars-Åke Bergqvist / QA-manager								
MTC Service / Certificates								

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Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048301	0.019	0.47	1.55	0.033	0.0060	17.34	13.27	2.68
048301	N 0.032							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
20350	301	344	598	48	44

Hardness test

Lot	Min	Max
	HRB	HRB
20350	74	76

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Leak test: Eddy current test acc to EN ISO 10893-1, ASME SA-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed at a temperature of Min 1040° C and quenched.

Marking:

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.44 35 TP316/316L CFA SML NDE 12.00 X 1.00 MM HT 545682 SS LOT 20350 MADE IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) by TUEV NORD; notified body, reg.no. 0045.

The number of tests are based on the size of the manufacturing lot before cutting to finished lengths.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2008.



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The certificate is produced with EDP and valid without signature.